Name : _____ ( )

Class : _____ Date : _____

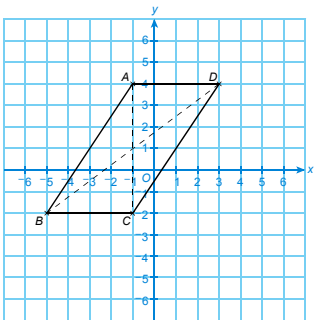
CHAPTER 9

Introduction to Coordinates

[Time allowed: 20 minutes]

Solution

1. (a), (b)



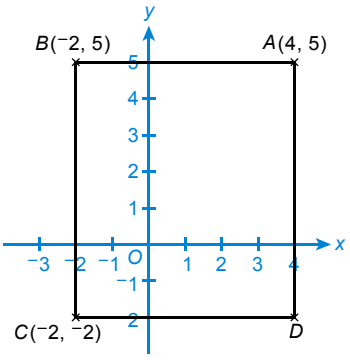
2A + 2A

(c) $ABCD$ is a parallelogram. 2A

(d) The coordinates of the point of intersection of the two diagonals are $(-1, 1)$. 2A

(e) The point of intersection of the two diagonals lies in quadrant II. 2A

2. (a)



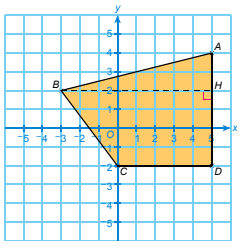
$\therefore$ Coordinates of $D = (4, -2)$ 2A

(b) $AB = [4-(-2)]$ units
$= 6$ units

$BC = [5-(-2)]$ units
$= 7$ units

$\therefore$ Perimeter of rectangle $ABCD = (AB + BC) \times 2$ units 2M
$= (6+7) \times 2$ units
$= 13 \times 2$ units
$= 26$ units 2A

3.



The coordinates of H are (5, 2).
BH=[5-(-3)]=5+3=8
CD=5-0=5
HD=[2-(-2)]=2+2=4

Area of trapezium $BHDC = \frac{1}{2} \times (BH + CD) \times HD$ 2M

$= \frac{1}{2} \times (8 + 5) \times 4$ square units

$= 26$ square units 2A

AH=4-2=2, BH=8 (as above)

Area of $\Delta ABH = \frac{1}{2} \times AH \times BH$ 2M

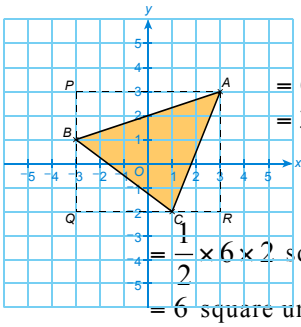
$= \frac{1}{2} \times 2 \times 8$ square units

$= 8$ square units 2A

$\therefore$ Area of quadrilateral $ABCD = (26 + 8)$ square units 2M

$= 34$ square units 2A

4.



Area of rectangle $APQR = AP \times PQ$

$= 6 \times 5$ square units

$= 30$ square units 2A

Area of ΔAPB=Area of $\Delta BCQ = \frac{1}{2} \times AP \times PB$ or $= \frac{1}{2} \times BQ \times QC$ 1M

$= \frac{1}{2} \times 6 \times 2$ square units

$= 6$ square units 2A

Area of $\Delta BQC = \frac{1}{2} \times BQ \times QC$ 1M

$= \frac{1}{2} \times 3 \times 4$ square units

$= 6$ square units 2A

Area of $\Delta ACR = \frac{1}{2} \times AR \times RC$ 1M

$= \frac{1}{2} \times 5 \times 2$ square units

$= 5$ square units 2A

$\therefore$ Area of $\Delta ABC = (30 - 6 - 6 - 5)$ square units 2M

$= \underline{13 \text{ square units}}$ 2A

(b) (i) Coordinates of A_1 $= \underline{\underline{(3, -2)}}$ 2A

Coordinates of B_1 $= \underline{\underline{(1, -1)}}$ 2A

Coordinates of C_1 $= \underline{\underline{(2, -4)}}$ 2A